Source Water Assessment Program (SWAP) Report
For
BROOMFIELD LABORATORIES

Prepared by the Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program

Date Prepared:
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Table 1: Public Water System (PWS) Information

PWS NAME	BROOMFIELD LABORATORIES
PWS Address	164 STILL RIVER ROOAD
City/Town	BOLTON
PWS ID Number	2034022
Local Contact	ANDREW BROOMFIELD
Phone Number	(978) 368-0931

Well Name	*Source ID#*	*Zone I (in feet)*	*IWPA (in feet)*	*Source Susceptibility*
Well #1	2034022-01G	100	411	High

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

? inventory land uses within the recharge areas of all public water supply sources;
? assess the susceptibility of drinking water sources to contamination from these land uses; and
? publicize the results to provide support for improved protection.

Maintaining Your Good Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

INTRODUCTION

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential contaminant sources, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential contaminant sources, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:
1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attached Map of the Protection Areas

1. DESCRIPTION OF THE WATER SYSTEM

The Well
The well for Broomfield Laboratories is located in a pit in the floor of the manufacturing area. The well has a Zone I of 100 feet and an Interim Wellhead Protection Area (IWPA) of 411 feet. The well is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone I and IWPA. The Broomfield Laboratory's water supply has no treatment at the time of this report. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1.

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.

- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

2. DISCUSSION OF LAND USES IN THE PROTECTION AREAS

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.
Key issues include**:**

1. **Inappropriate activities in Zone I;**
2. **Machine/ metal working shop;**
3. **Hazardous material storage and use;**
4. **Aboveground storage tank (AST) with heating oil;**
5. **Septic system;**
6. **Transmission line right of way; and**
7. **Very small quantity hazardous waste generator.**

The overall ranking of susceptibility to contamination for the well is High, based on the presence of at least one high threat land use or activity in the IWPA.

1. **Zone I** - Currently, the well does not meet DEP's restrictions, which only allow water supply related activities in Zone I. The Broomfield Laboratories' Zone I contains a parking lot and the site building (industrial manufacturer). Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

2. **Machine/ metal working shop –** The facility is a machine/ metal working shop. The daily operations include activities such as welding metal, cleaning the metal, and painting.

3. **Hazardous material storage and use –** As a result of their daily operations at the facility, paint, acetone and other solvents are stored at the site. They are stored in well-labeled containers, in a bermed and secure area within the IWPA.

4. **Aboveground storage tank (AST) –** An AST containing fuel oil is stored within the Zone I and IWPA. The tank is 4 years old, located on an impermeable surface, double-walled with leak detection, and has a capacity of 2,000 gallons.

Table 2: Table of Activities within the Water Supply Protection Areas

Facility Type	Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Industrial	Machine/metalworking shop	Yes	Yes	High	Use lacquer thinner & paint in every day operations.
	Hazardous material storage	Yes	Yes	High	Storage of the chemicals used in daily operations.
	Parking lot and road	Yes	Yes	Moderate	Limit road salt usage and provide drainage away from wells
	Petroleum/fuel oil storage(aboveground)	No	Yes	Moderate	#2 fuel oil for heating the building
	Septic system	No	Yes	Moderate	See attached brochure on septic systems
	Transmission line right of way	No	Yes	Low	Spraying of herbicides for clearing
	Very small quantity hazardous waste generator	Yes	Yes	Low	Stored in well-secured area permit

*** -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.**

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone II. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

5. **Septic system –** The septic system for the facility is located within the IWPA. Septic systems can be a potential source of contamination if improperly managed. The system is about four years old, and the water system operator indicates that the septic system is closely monitored.

6. **Transmission line right of way –** The line lies within the Zone I and IWPA. The potential contamination is the spraying of herbicide by the utility company for clearing.

7. **Very small quantity Hazardous waste generator –** As a result of the daily operations at the site, small quantities of hazardous waste are generated. The waste is removed periodically by a licensed hauler.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

3. PROTECTION RECOMMENDATIONS

Broomfield Laboratories should review and adopt the following recommendations at the facility:

Zone I:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements.
- ✓ Consider well relocation if Zone I threats cannot be mitigated.
- ✓ Prohibit public access to the well and pumphouse by locking facilities, gating roads, and posting signs.
- ✓ Redirect road and parking lot drainage away from well. Work with your community to ensure that stormwater runoff in the IWPA is directed away from the well and is treated according to DEP guidance.
- ✓ Do not use or store pesticides, fertilizers or road salt within Zone I.
- ✓ Use propane or natural gas for back-up power sources. (do they have a backup generator)

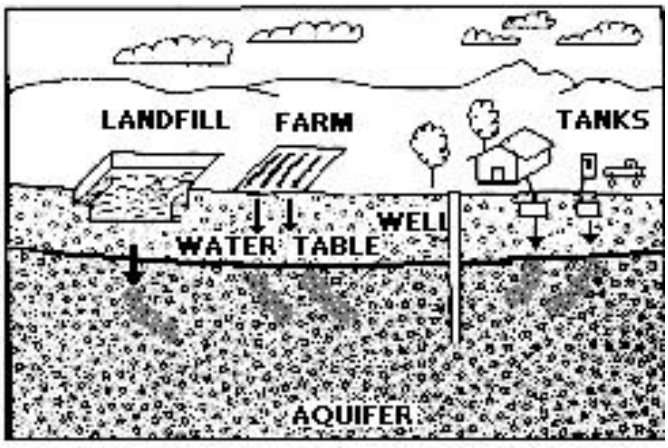

Figure 1: Example of how a well could become contaminated by different land uses and activities.

Training and Education:

- ✓ Train staff on proper hazardous material use, transport, disposal, emergency response, and best management practices; include custodial staff, groundskeepers and certified operator.
- ✓ Post drinking water protection area signs at key visibility locations.

Facilities Management:

- ✓ Implement standard operating procedures regarding proper storage, use transport, and disposal of hazardous materials.To learn more, see the hazardous materials guidance manual at http://www.dep.state.ma.us/dep/bwp/dhm/dhmpubs.htm
- ✓ Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property.

For More Information:

Contact Josephine Yemoh-Ndi in DEP's Worcester Office at (508) 792-7650 x 5030 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on DEP's web site at: www.state.ma.us/dep/brp/dws.

Copies of this assessment have been provided to the water department, town boards, the town library and the local media.

- ✓ Septic system components should be located, inspected, and maintained on a regular basis. Refer to the attachments for more information regarding septic systems.

Planning:

- ✓ Work with local officials in Bolton to include the Broomfield Laboratories' IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a potential contaminant threat inventory to assist in setting priorities, focusing inspections, and creating educational activities.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

Attachment:

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Fact sheet
- Your Septic System Brochure
- Pesticide Use Fact sheet